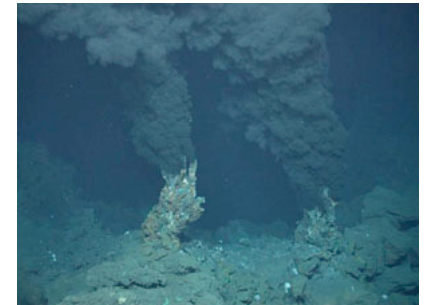




IFM-GEOMAR

Leibniz-Institut für Meereswissenschaften
an der Universität Kiel



Leibniz Institute of Marine Sciences at the University of Kiel



Dr. Andreas Villwock



About the Institute

- The Leibniz-Institute of Marine Sciences (IFM-GEOMAR) was founded Jan. 1, 2004 through the merger of the Institute for Marine Science (IfM) and the GEOMAR Research Centre.
- The IFM-GEOMAR is member of the Leibniz Association (Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz (WGL)) jointly founded through the federal governments and the state of Schleswig-Holstein.
- The overall budget is about € 41 Mio. (2004)
- The IFM-GEOMAR has about 380 employees at two locations:

IFM-GEOMAR Locations



Mission Statement

**Investigation of the chemical, physical, biological
and geological processes in the ocean and their
interaction with the ocean floor and the**

or

Marine Research

**... from the deep sea to the atmosphere above the
oceans...**

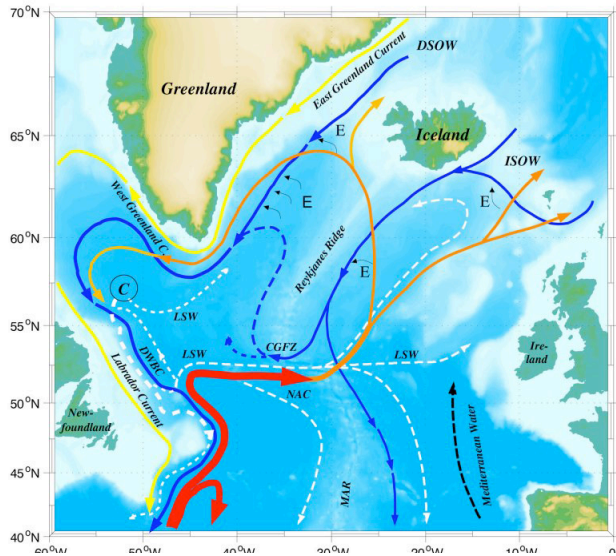


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Excellence in Marine Research

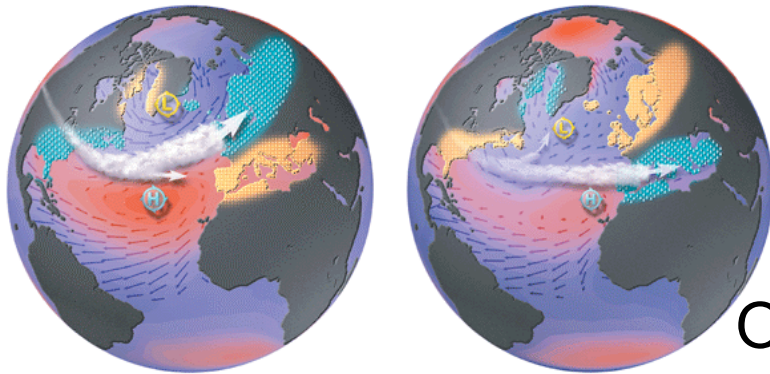
Ocean Circulation and Climate Dynamics



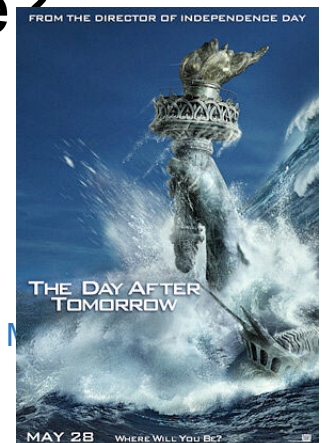
The impact of the ocean on the climate of the North Atlantic region

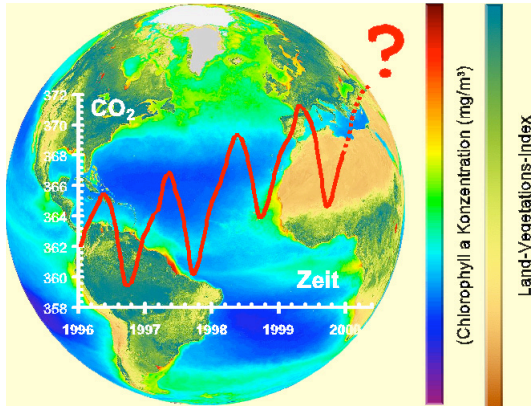
– How will the next winter look like?

How does climate change? - Will warming continue or is a sudden cooling possible?



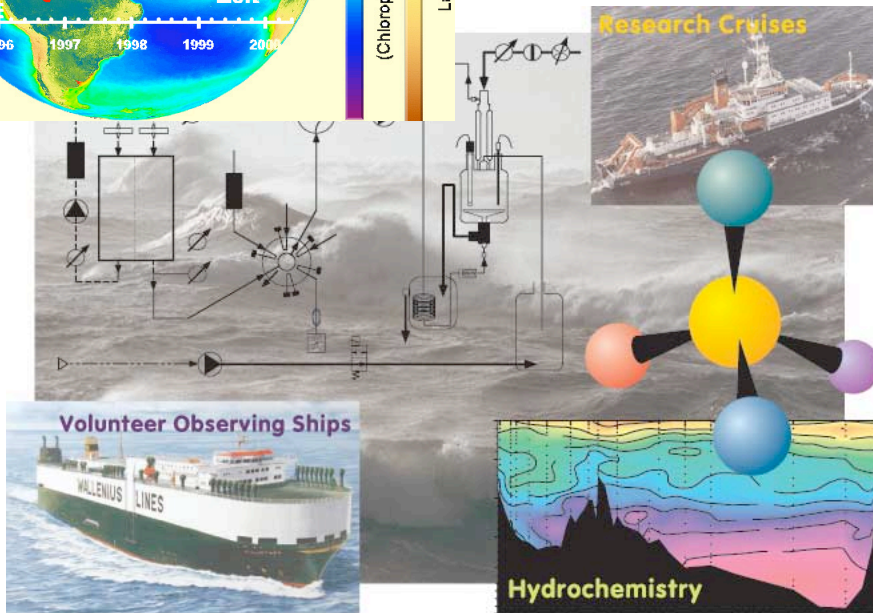
Oceanographic observations and modeling studies will help us, to answer these questions.





Marine Biogeochemistry

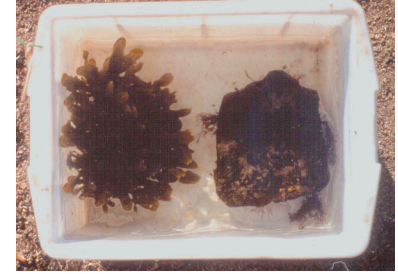
- How does the marine carbon cycle look like?
- Is the ocean the missing sink?



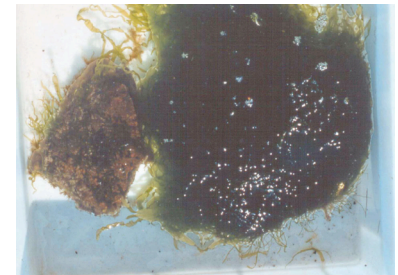
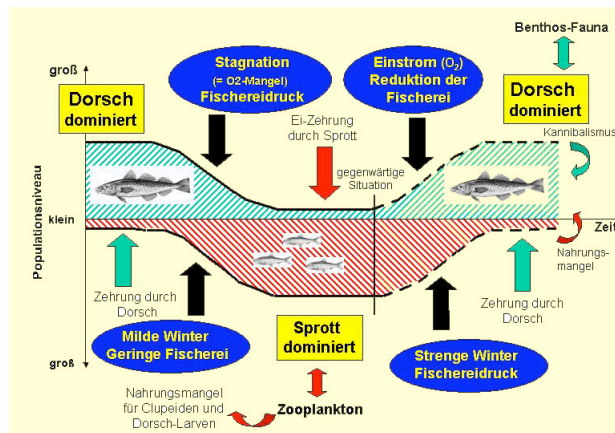
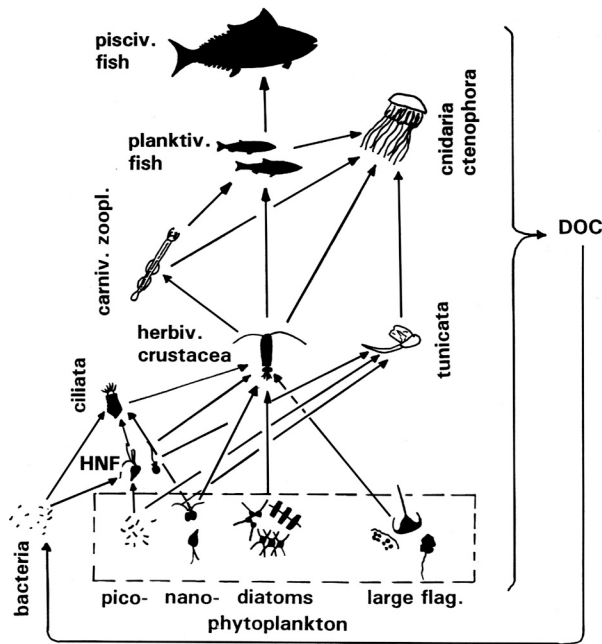
How much carbon can be stored in the deep ocean?
What is the role of biological and chemical interactions?



Marine Ecology



The marine Ecosystem is very sensitive to various factors. How do these mechanisms work? Which disturbances are caused due to human impacts and what is their result?

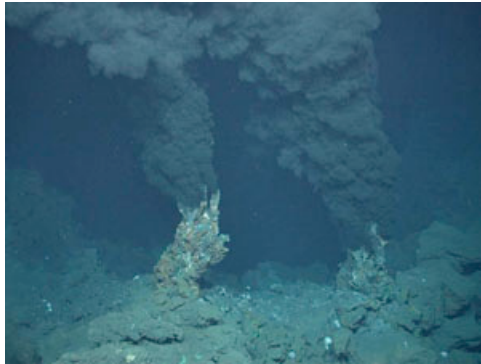


Excellence in Marine Research

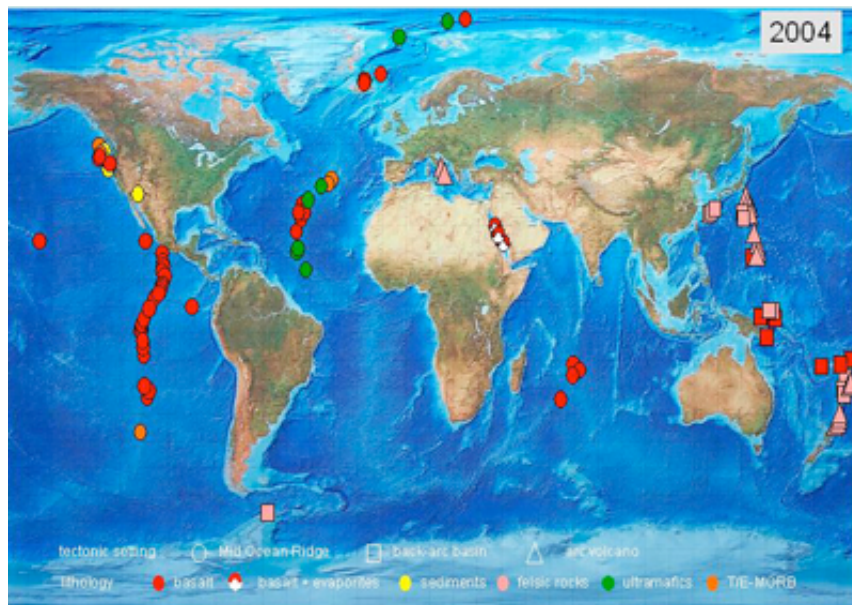
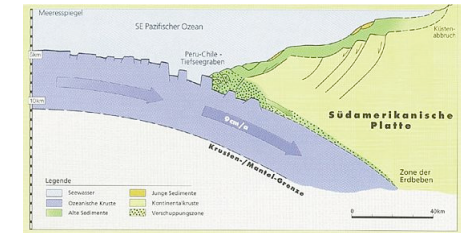


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Dynamics of the Ocean Floor



- Volcanic processes are responsible for growing and decay of the ocean floor. In addition to natural hazards caused by these processes (e.g.

(Volcanism, earth quakes/Tsunamis), influences on ecosystems and natural resources are part of the research agenda.

IFM-GEOMAR Research Vessels



IFM-GEOMAR

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RV Alkor



RV Poseidon



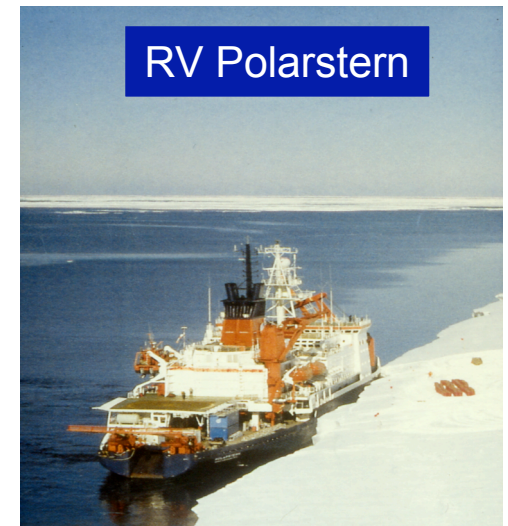
RV Littorina



RV Polarfuchs



RV Meteor



RV Polarstern



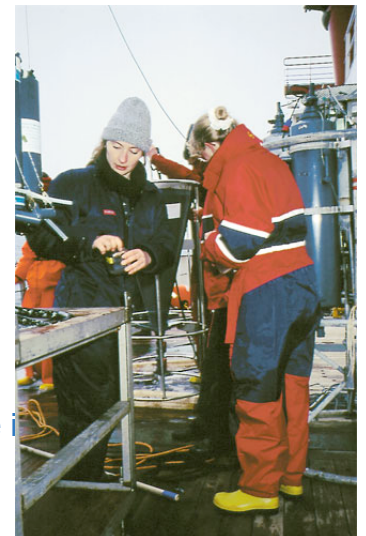
RV Sonne



RV Maria S. Merian

Education at IFM-GEOMAR

As an institute at Kiel University, IFM-GEOMAR offers full study courses in Oceanography and **Meteorology**, as well as advanced study courses in Biological Oceanography, Marine Chemistry and Fishery Biology. Scientists also contribute to education on Geology and Geophysics.



The Aquarium

The public aquarium of IFM-GEOMAR offers views into the population in the Baltic and North Sea, lakes and rivers as well as tropical oceans.



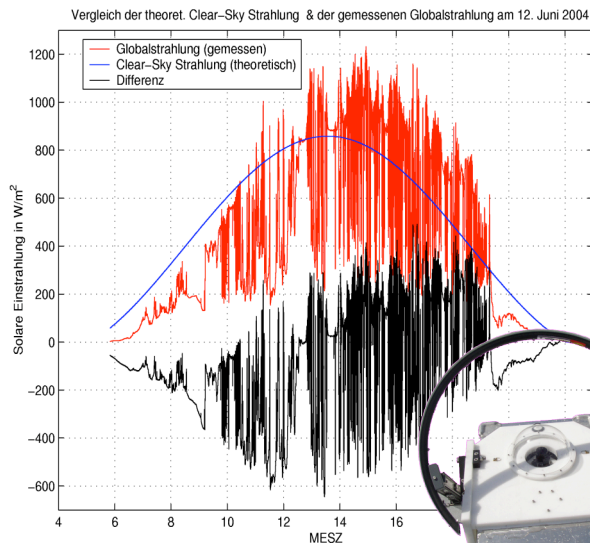
Energy and Water Cycle - Modelling & Observations -

Precipitation

- Water cycle
- Oc./atm.-Exchange
- Cloud modelling

DEKLIM (BMBF)

Radiative Transfer



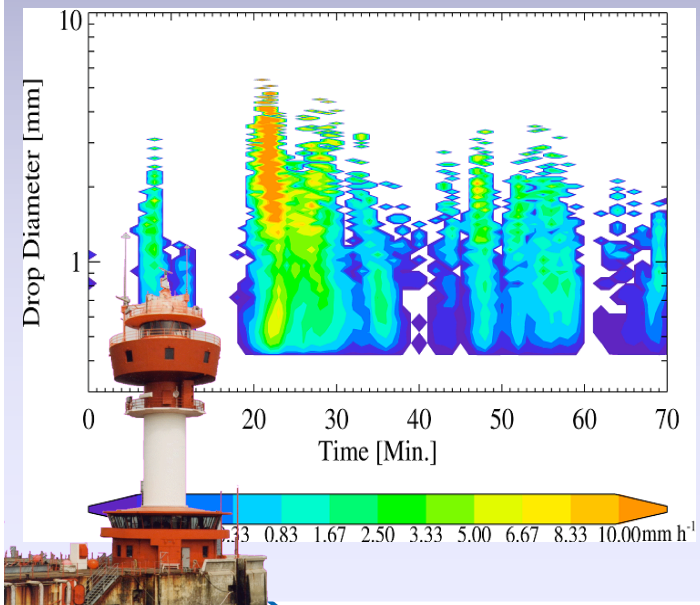
- Solar heating of the Earth
- Greenhouse effect
- Appl. in climate models

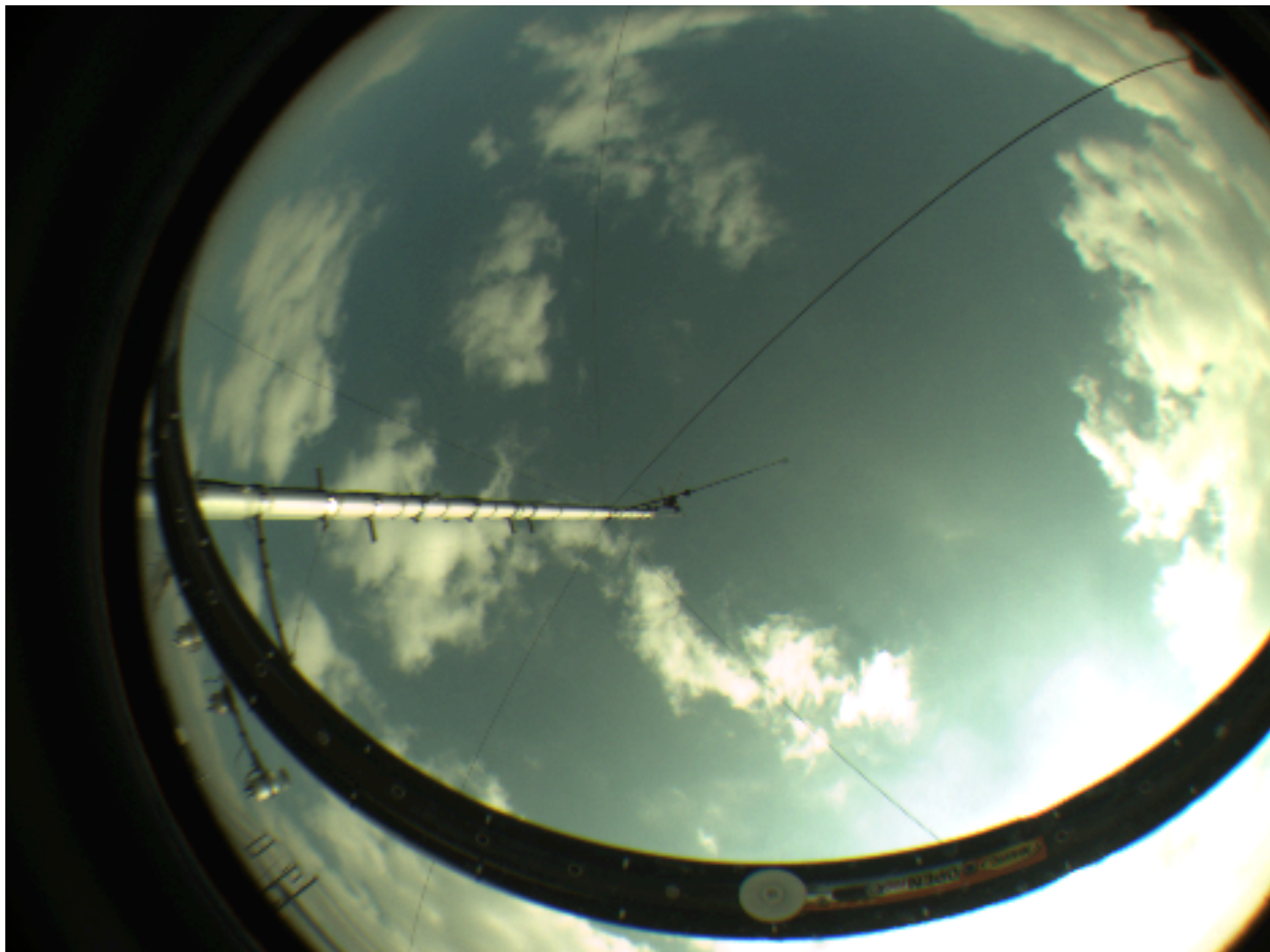
AFO2000 (BMBF)
DWD, KNMI, BfS,

Remote Sensing

- Cloud climatology
- Cloud life cycle
- Water vapor / temperature
- Severe weather
- Plancton
- Sea ice

AFO2000 (BMBF)
DWD, VW-Stiftung







loop



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Excellence in Marine Research

Vergleich der theoret. Clear-Sky Strahlung & der gemessenen Globalstrahlung am 12. Juni 2004

